

IN THE CLAIMS:

1. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device, comprising:

dropping a solution containing a carbon nanotube with conductor property and a carbon nanotube with semiconductor property onto a first electrode, a second electrode, and a region between the first electrode and the second electrode and overlapped with the third electrode through [the] an insulating film while an alternating current voltage is applied between the first electrode and the second electrode which are located over [an] the insulating film over a third electrode;

controlling the carbon nanotubes in a predetermined alignment direction; and

applying a direct current voltage between the first electrode and the second electrode to remove the carbon nanotube with conductor property,

wherein the first electrode is connected with the second electrode through the carbon nanotube with semiconductor property in the carbon nanotube semiconductor device.

2. (Original) A method of manufacturing a carbon nanotube semiconductor device according to claim 1, further comprising rubbing a surface of the first electrode, a surface of the second electrode, and a surface of the insulating film between the first electrode and the second electrode overlapped with the third electrode.

3. (Original) A method of manufacturing a carbon nanotube semiconductor device according to claim 1, further comprising:

forming an alignment film over the first electrode, the second electrode, and the insulating film between the first electrode and the second electrode; and

rubbing a surface of the alignment film.

4. (Cancelled)

5. (Cancelled)

6. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device according to ~~claims~~ claim 1, wherein a frequency of the alternating current voltage is equal to or larger than 1 MHz.

7. (Cancelled)

8. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device according to ~~claims~~ claim 1, wherein a concentration of carbon nanotubes contained in the carbon nanotube solution is equal to or lower than 0.0005%.

9. (Cancelled)

10. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device, comprising:

forming a gate electrode over a substrate;

forming a gate insulating film over the gate electrode and the substrate;

forming a source electrode and a drain electrode over the gate insulating film;

applying a carbon nanotube solution comprising a solvent, a carbon nanotube having with conductor property and a carbon nanotube having with semiconductor property over the source electrode, the drain electrode and a region of the gate insulating film between the source electrode and the drain electrode and overlapped with the gate electrode;

applying an alternating current voltage between the source electrode and the drain electrode in order to control [the] an alignment direction of the carbon nanotube;

evaporating the solvent for forming a carbon nanotube layer connecting the source electrode and the drain electrode; and

applying a direct current voltage between the source electrode and the drain electrode in order to remove the carbon nanotube with conductor property.

11. (Original) A method of manufacturing a carbon nanotube semiconductor device according to claim 10, further comprising:

forming an alignment film so as to cover the source electrode, the drain electrode, and the gate insulating film between the source electrode and the drain electrode; and  
rubbing a surface of the alignment film.

12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device according to ~~claims~~ claim 10, wherein a frequency of the alternating current voltage is equal to or larger than 1 MHz.

15. (Cancelled)

16. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device according to ~~claims~~ claim 10, wherein a concentration of the carbon nanotube contained in the carbon nanotube solution is equal to or lower than 0.0005%.

17. (Cancelled)

18. (Currently Amended) A method of manufacturing a carbon nanotube semiconductor device, comprising:

providing a first electrode and a second electrode over ~~an insulating surface substrate~~;

applying a solution containing [a] carbon ~~nanotube~~ nanotubes with conductor property and [a] carbon ~~nanotube~~ nanotubes with semiconductor property over the first and second electrodes and a region of ~~the insulating surface~~ a surface of the substrate between the first and second electrodes;

controlling the carbon nanotubes in a predetermined alignment direction; and applying a direct current voltage between the first and second electrodes, thereby ~~in order to remove~~ removing the carbon ~~nanotube~~ nanotubes with conductor property, wherein a third electrode is located adjacent to and overlapped with the carbon ~~nanotube~~ nanotubes with semiconductor property connecting the first and second electrodes with an insulating film therebetween.